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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,052	10/15/2003	Adam Jude Ahne	2003-0115.02	7000
21972 7590 04/24/2007 LEXMARK INTERNATIONAL, INC. INTELLECTUAL PROPERTY LAW DEPARTMENT 740 WEST NEW CIRCLE ROAD BLDG. 082-1 LEXINGTON, KY 40550-0999			EXAMINER TRA, ANH QUAN	
			ART UNIT	PAPER NUMBER
			2816	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/24/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/686,052

Applicant(s)

AHNE ET AL.

Examiner

Quan Tra

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 3/15/07.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 and 24-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

This office action is in response to the amendment filed 3/15/07. The rejection in previous office action is maintained. A new ground of rejection is introduced for claim 22 as necessitated by amendment.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 22 is rejected under 35 U.S.C. 102(e) as being anticipated by Brow et al. (USP 6636102).

Brow et al.'s figure 1 shows a fuse sensor comprising: a first transistor (M19) defining a read input for receiving a read signal, a first terminal coupled to said fusible link (R23), and a second terminal coupled to an output port; and a second transistor (M14) having a bias input biased to a voltage reference (VDD, when I21 generates a high level), having a third terminal coupled to the second terminal of the first transistor, and a fourth terminal coupled to a ground; a third transistor (M22) having an input terminal coupled a bias input biased to the voltage reference (VDD, when Read is high), having a fifth terminal coupled between the fusible link and the first terminal of the first transistor, and having a sixth terminal coupled to ground.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 12, 14-21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carpenter, Jr. et al. (USP 6469884) in view of Yamazaki et al. (USP 5180967).

As to claim 12, Carpenter, Jr. et al.'s figure 1 shows a fuse sensor, but fails to show the detail of the current source that coupled to circuit 12. However, Yamazaki et al.'s figure 2 shows a constant current source. Therefore, it would have been obvious to one having ordinary skill in the art to use Yamazaki et al.'s current source for Carpenter, Jr. et al.'s current source for the purpose of providing a constant current source to the circuit. It is noted that Yamazaki's Vdd is now Carpenter's Vcp. Thus, the modified Carpenter's figure 1 shows: a first transistor (MNread) defining a read input for receiving a read signal, a first terminal coupled to the fusible link (F1), and a second terminal coupled to an output port; and a second transistor (Yamazaki's 216) having a bias input biased to a voltage reference (Vcp via 206, 214 or voltage at N22), having a third terminal coupled to the second terminal of the first transistor, and a fourth terminal coupled to a ground.

As to claims 14-21, the modified Carpenter's figure 1 fails to show that an output voltage at the output port in a range of about 1 volt to about 2.5 volts or about 1.5 volts signifies that the fusible link is opened; or an output voltage at the output port indicates that the fusible link is opened when the fusible link has a resistance in a range of about 1 k ohms to about 2 k ohms, about 15 k ohms to about 30 k ohms, about 1 k ohms, 2 k ohms, 17 k ohms, or 27 k ohms. However, The selection of the above values is seen as an obvious matter of preference bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization because applicant has not disclosed that the limitation is for a particular unobvious purpose, produce an unexpected result, or is otherwise critical, and it appears prima

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facie that the process would possess utility using another relative frequency. Indeed, it has been held that optimization of range limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See MPEP 2144.05(II). Therefore, it would have been obvious to one having ordinary skill in the art to select the output voltage value (by selecting supply voltage  $V_{cc}$  or the size of the transistors) or the opened fuse resistance value to be one of the above values dependent upon particular environment of use to ensure optimum performance.

As to claim 23, it is known that ink jet printhead and an ink jet printer has fuse sense circuit. Therefore it would have been obvious to one having ordinary skill in the art to use the modified Carpenter's figure 1 in ink jet printhead and an ink jet printer for the purpose of provide better protection for the ink jet printhead and an ink jet printer.

3. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carpenter, Jr. et al. (USP 6469884) in view of Yamazaki et al. (USP 5180967) and Erstad (USP 6833749).

The modified Carpenter's figure 1 further fails to show the detail of circuit 12. However, Erstad's figure 2 shows a Schmitt trigger circuit having low noise. Therefore, it would have been obvious to one having ordinary skill in the art to use Erstad's Schmitt trigger circuit for Carpenter's Schmitt trigger circuit for the purpose of reducing noise. Thus, the modified Carpenter's figure 1 further shows an inverter circuit (Erstad's 230) coupled between the second terminal of the first transistor and the output port.

### ***Response to Arguments***

4. Applicants' arguments have been fully considered but they are not persuasive.

Applicants argue that "Yamazaki does not disclose, teach, or suggest a second transistor having a bias input biased to a voltage reference, having a third terminal coupled to the second terminal of the first transistor, and a fourth terminal coupled to a ground". The

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Examiner respectfully disagrees. The modified Carpenter, Jr. et al. teaches a second transistor (Yamazaki's 216) having bias input biased to a voltage reference (voltage at its gate of  $V_{cp}$  via 220, 204 and 204), having a third terminal (drain) coupled to the second terminal of the first transistor, and a fourth terminal (source) coupled to a ground.

Applicants further submit that it would not be obvious to combine Yamazaki with Carpenter in an attempt to yield Applicants' invention of claim 12. The examiner respectfully disagrees. Carpenter, Jr. et al. shows a general current source. One skilled in the art would have motivated to use any current source for Carpenter, Jr. et al.'s current source. Yamazaki's figure 2 shows a precise current source. Therefore, it would have been obvious to one having ordinary skill in the art to use Yamazaki's current source for Carpenter, Jr. et al.'s current source in order to provide a precise current to the circuit. Further, It is not necessary that the cited references or prior art actually suggest expressly or in so many words, the changes or improvements that applicant has made. The test for combining references is what the references as a whole would have suggested to one of ordinary skill in the art. In re Shekier, 168 USPQ 716 (CCPA 1971) : In re McLaughlin 170 I USPQ 209 (CCPA 1971); In re Young 159 USPQ 725 (CCPA 1968).

Applicant further argues that the prior arts fail to teach the limitation of claim 14. However, it is known that  $V_{out}$  changes its state based on the input value of  $V_{in}$  reaches above or below the switching threshold level of circuit 12. It is seen as an obvious desire preference to select the switching threshold is from 1 to 2.5 volt dependent upon a particular environment of use to ensure optimum performance. Further see the above rejection.

The selection of the value of the fuse's resistance when open is also seen as an obvious desire preference, see above rejection.

**Conclusion**

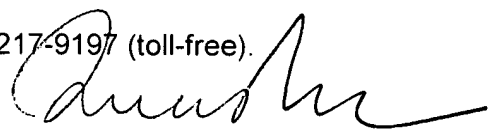
5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan Tra whose telephone number is 571-272-1755. The examiner can normally be reached on 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**QUAN TRA**  
**PRIMARY EXAMINER**